



Advisory

Wildfire evacuation



Strategies to navigate and
address the escalating crisis

→ Invested in **meaningful** outcomes

Contents

01	Executive summary	3
02	Factors contributing to the rise in wildfire incidents	4
03	Impact of wildfires on communities, the economy and the environment	6
04	Challenges in effective wildfire evacuation	10
05	Enhancing wildfire evacuation: The synergy between government, business and communities	14
06	Effective strategies in global wildfire crisis management	16
07	Enhancing wildfire resilience: The crucial role of the insurance industry	20
08	The road ahead: A unified approach to the wildfire crisis	21
	Authors and contacts	23
	Endnotes	24

01

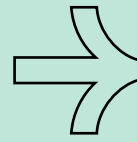
Executive summary

The world is witnessing an alarming escalation in the frequency and intensity of wildfires, particularly in regions more susceptible to the ravages of climate change. Wildfires are uncontrolled fires that burn in wildland vegetation, often in rural areas.¹ Although wildfires have traditionally played a crucial role in various ecosystems by facilitating the clearance of dead underbrush and the replenishment of nutrients, their occurrence is steadily increasing in frequency, severity and geographical scope. In 2023, unprecedented wildfires severely damaged boreal forests throughout the Northern Hemisphere, marking it as the worst year on record.²

Wildfires pose a serious threat to the safety and wellbeing of communities, ecosystems and economies. The impact spreads far beyond those directly involved with fire effluent (toxic gases, visible smoke and heat), potentially travelling hundreds of kilometres. Governments, businesses, civil society and other organisations are faced with ensuring personal safety, protecting property and preparing for potential evacuations while navigating the unpredictable and destructive wildfires.

Climate change is the primary driver behind this escalation, making our landscapes more susceptible to prolonged droughts, higher temperatures and extreme weather events. These conditions provide the perfect breeding ground for greater and more destructive wildfires. As a result, communities face increased risks to life and property, while ecosystems suffer irreparable damage.

Effective evacuation during a wildfire event is a daunting and complex challenge. The word “evacuation” can provide a false sense of security, as the impact of a wildfire is much more than vacating an area or one’s home. Factors such as population growth in wildfire-prone areas, inadequate infrastructure, lack of planning, absent means of warning and notification and limited resources complicate these procedures. The unpredictability of wildfires means that evacuation plans must be adaptive, responsive and capable of handling surges in demand.



Wildfires: An escalating crisis

Wildfires are no longer isolated events; they have transformed into a pervasive and escalating crisis.

According to the European Space Agency (ESA), wildfires currently affect an estimated four million square kilometres of land each year, half the size of the United States (US). The global economy bears the burden of wildfires, with the average annual cost approximating US\$50 billion.

Notably, the US has encountered approximately 1.5 million wildfires since 2000. Additionally, data from the United Nations Environment Programme (UNEP) reveals that 30 percent of the global population faces exposure to lethal heatwaves for more than 20 days annually.

Sources: GHD analysis based on data from The ESA, The World Economic Forum and IPCC.

The urgency to address wildfires extends far beyond the potential for charred landscapes and displaced communities; it underscores a collective moral imperative. The growing threat of wildfires compels industries across the spectrum to recognise their shared responsibility in supporting the planet. From agriculture to technology, energy to construction, every sector is now mandated to incorporate sustainable practices, foster resilience and promote innovations that can aid in preventing, mitigating and adapting to wildfires. The interconnectedness of our modern world underscores the profound consequences of inaction. All stakeholders must share the responsibility of wildfire prevention and recovery — for the sake of communities and the future of the planet.

Therefore, addressing the wildfire crisis demands a shift in thinking and approach. Comprehensive strategies for wildfire management include planning, risk reduction and prevention, preparedness, firefighting efforts and post-disaster recovery — all while being sensitive to environmental and social factors. It’s clear that no single approach or entity can tackle this complex problem alone. Thus, preparation and collaboration are the keys to success.

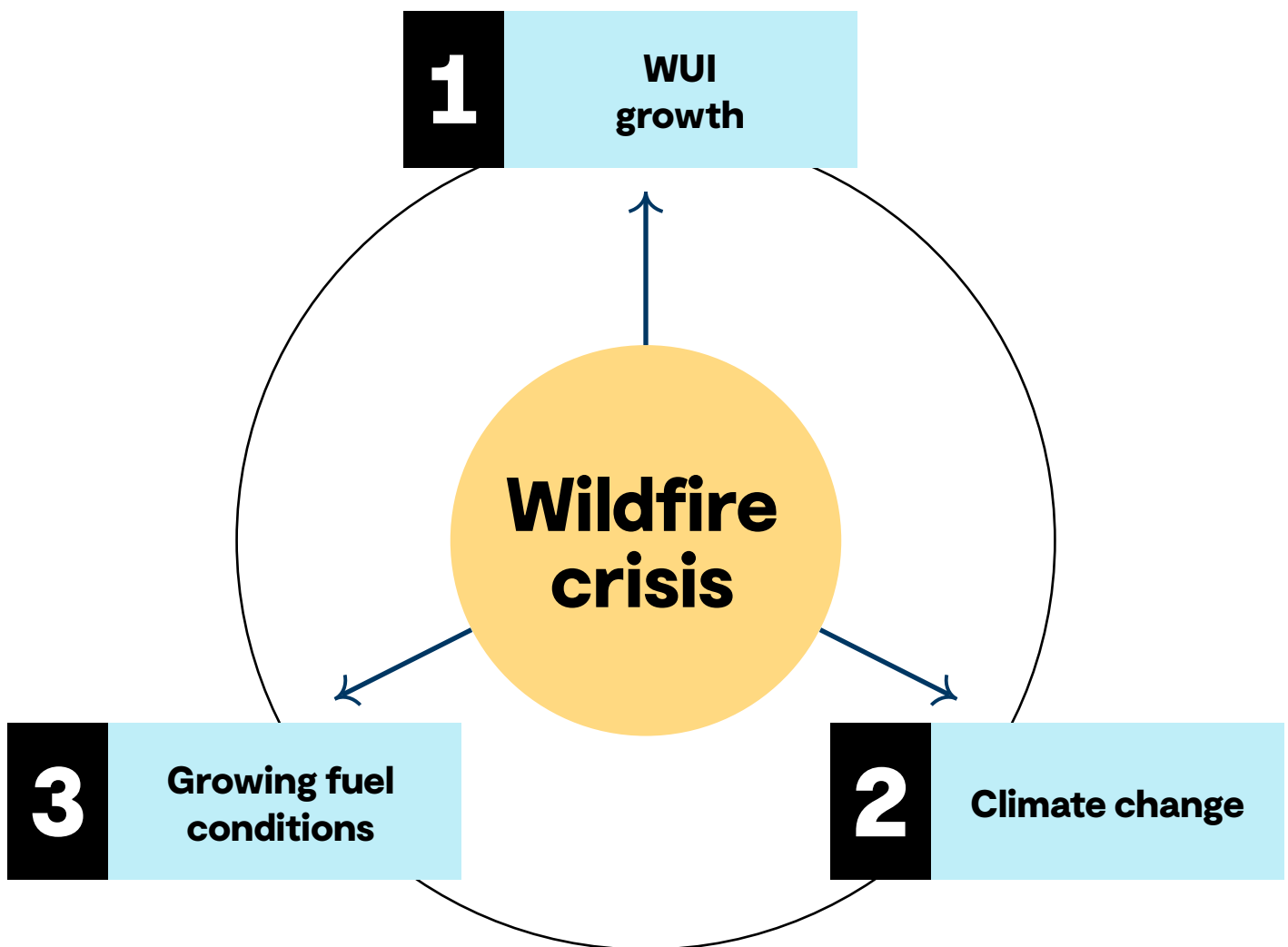
This report explores the multifaceted landscape of wildfire challenges, focusing on proactive planning and variable capacity for evacuation. It seeks to shed light on the urgent need for collaborative efforts between the government and businesses to enhance wildfire evacuation effectiveness.

Factors contributing to the rise in wildfire incidents

The increasing incidence of wildfires is driven by growth in the zone between wilderness and developed land, known as wildland-urban interface (WUI), hazardous climate/weather and growing fuel conditions (Figure 1). Wildfires are

a complex interplay of these factors, each contributing to their growing frequency and intensity and their impact on populated areas.

Figure 1. *Fuelling the flames: The primary drivers of increasing wildfire severity and frequency*



Source: GHD Burntfields™ analysis.

1 WUI growth

The wildfire crisis is exacerbated by the rapid expansion of the WUI, where the human footprint, including homes, businesses, schools and infrastructure, encroaches upon wildland areas. **It provides more ignition sources and flammable materials.**

2 Climate change

Climate change intensifies the wildfire threat by subjecting WUI areas to longer periods of drought, elevated air temperatures and extreme weather events. These create conditions for wildfires, as they result in more lightning strikes and stronger winds, accelerating the spread of fires and making WUI communities increasingly vulnerable. **It is projected that severe wildfires could increase globally, with estimated rises of 14 percent by 2030, 30 percent by 2050 and 50 percent by the end of this century.**³

Severe wildfires could increase by



Source: UNEP

3 Growing fuel conditions

The wildfire crisis is fuelled by worsening environmental conditions, driven in part by increasing droughts in many regions. Drier environments render trees and vegetation more susceptible to ignition and rapid burning. Property development within the WUI disrupts the natural fire cycle, often preventing the controlled clearing of undergrowth. **As a result, ample fuel is readily available when a large wildfire ignites, making containment efforts even more challenging.**



Impact of wildfires on communities, the economy and the environment

Wildfires are not just environmental disasters; they are complex crises that deeply impact communities, economies and the environment in interconnected ways.

→ Displacement

- Displacement due to wildfires is a significant social and economic challenge. The destruction of homes and infrastructure forces people to evacuate and often results in the loss of property, personal belongings and sentimental values. For example, the 2018 California Camp Fire incurred about US\$19 billion in direct costs, while the 2019–20 Australian wildfires resulted in US\$23 billion in direct costs.⁴ Approximately six million homes in the US are now considered uninsurable due to wildfire risk, adding to the financial challenges.⁵
- Displacement can lead to job loss, especially in industries closely tied to the affected areas, such as tourism, services, agriculture, forestry and any other industrial areas affected by the extended reach of the wildfire. Displaced workers may struggle to find alternative employment opportunities, affecting both their livelihoods and the local — and even national — economy by stressing unemployment figures.

→ Impacts on soil and water

- Wildfires can have severe environmental consequences on soil and water quality. Intense heat can alter soil structure, making it more prone to erosion and compromising its ability to support vegetation. Globally, wildfires consume over 370 million hectares annually, emitting more than 1.8 billion tonnes of greenhouse gases.⁶ Forest wildfires, while representing only five percent of total land burned, contribute more than 80 percent of greenhouse gas emissions.⁷ Unprecedented Canadian wildfires have transformed forests from carbon sinks to carbon sources, releasing 290

million tonnes of CO₂ into the atmosphere in 2023, contributing to more than 25 percent of the world's total emissions for the year.⁸

- Post-fire runoff can carry sediment, ash and chemicals into water bodies, contaminating them and disrupting aquatic ecosystems. This can affect both environmental health and the availability of clean water for human use.

→ Ecological losses

- Wildfires can result in extensive ecological losses. They can destroy habitats, consume vegetation and disrupt natural ecosystems. Many plant and animal species may struggle to recover or face local extinctions.
- The loss of biodiversity can have cascading effects on ecosystem services, including pollination, soil fertility and pest control. This can impact agriculture and other human activities dependent on healthy ecosystems.

→ Human health impacts

- Wildfires pose direct and indirect threats to human health. The inhalation of wildfire smoke, which contains fine particulate matter and harmful gases, can lead to respiratory problems, exacerbate preexisting conditions and even cause premature death. Wildfires that contribute to global air pollution cause approximately 340,000 premature deaths worldwide.⁹



- Prolonged exposure to poor air quality can also have mental health consequences, such as increased anxiety and stress, affecting the overall wellbeing of affected communities. A study in *Nature* revealed that increasing wildfire smoke pollution has reversed or stalled air quality improvements in 41 of 48 US states,¹⁰ regressing approximately four years of progress.¹¹ The 2023 wildfires resulted in a spike of asthma-related emergency room visits, with a 17 percent nationwide increase in hospital visits during the worst smoke months, according to data from 4,000 hospitals surveyed by the Centers for Disease Control and Prevention (CDC).¹²

→ **Loss of life**

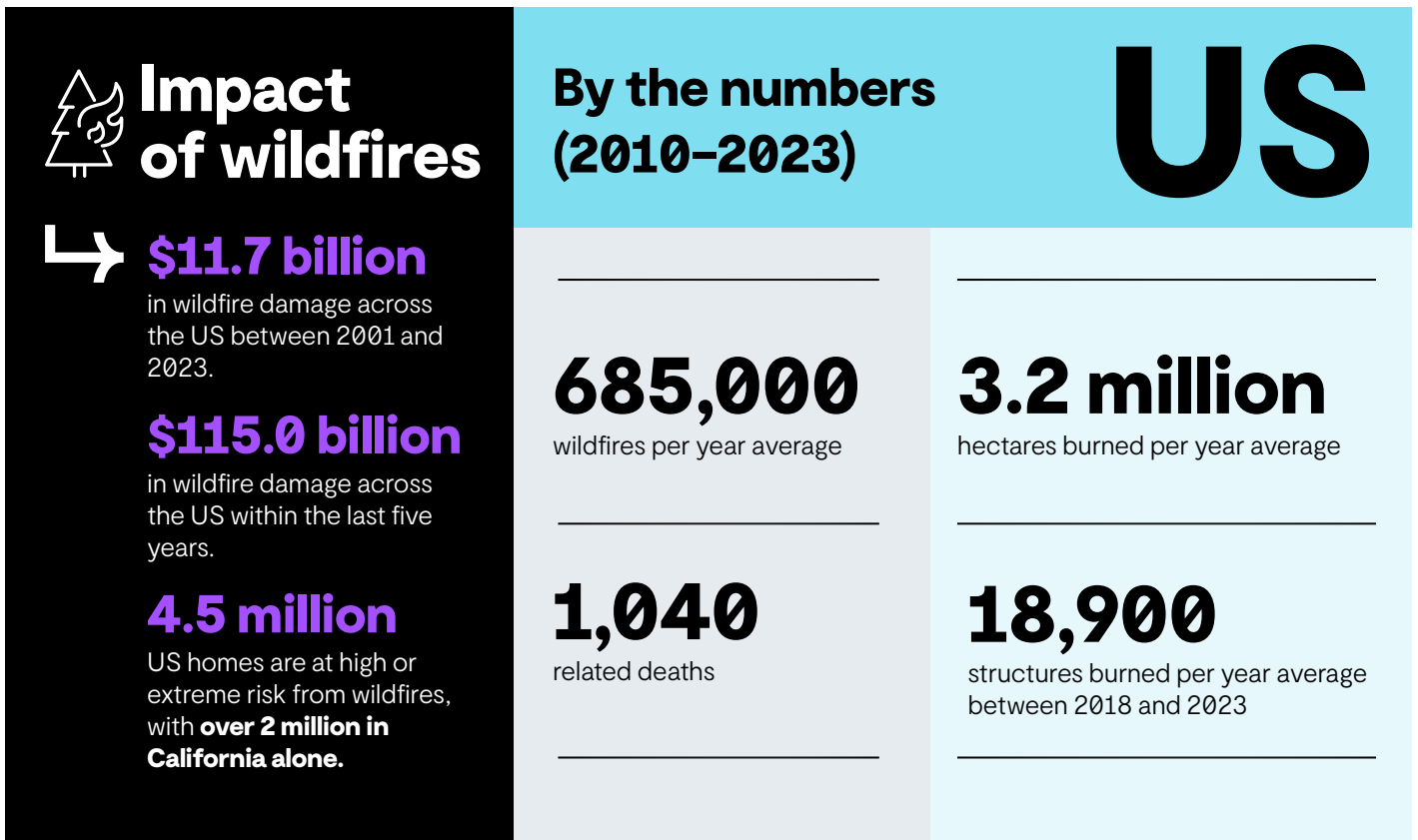
- The most tragic consequence of sudden and destructive wildfires is the loss of human life.
- Additionally, wildfires often result in the loss of pets and livestock, causing emotional distress and economic hardships for individuals and communities that rely on these animals for companionship and livelihood.

→ **Mass movement**

- Wildfires alter the landscape, making it susceptible to post-fire mass movements like landslides and mudslides. Their susceptibility increases with the loss of vegetation and alteration of soil properties.
- Mass movements damage infrastructure, and blocked roads pose additional risks to people living in or around wildfire-affected areas. They can complicate rescue and recovery efforts and further strain resources.

Figures 2, 3 and 4 highlight some of the wildfire impacts that have occurred in the US, Canada and Australia.

Figure 2. Wildfire impact: United States

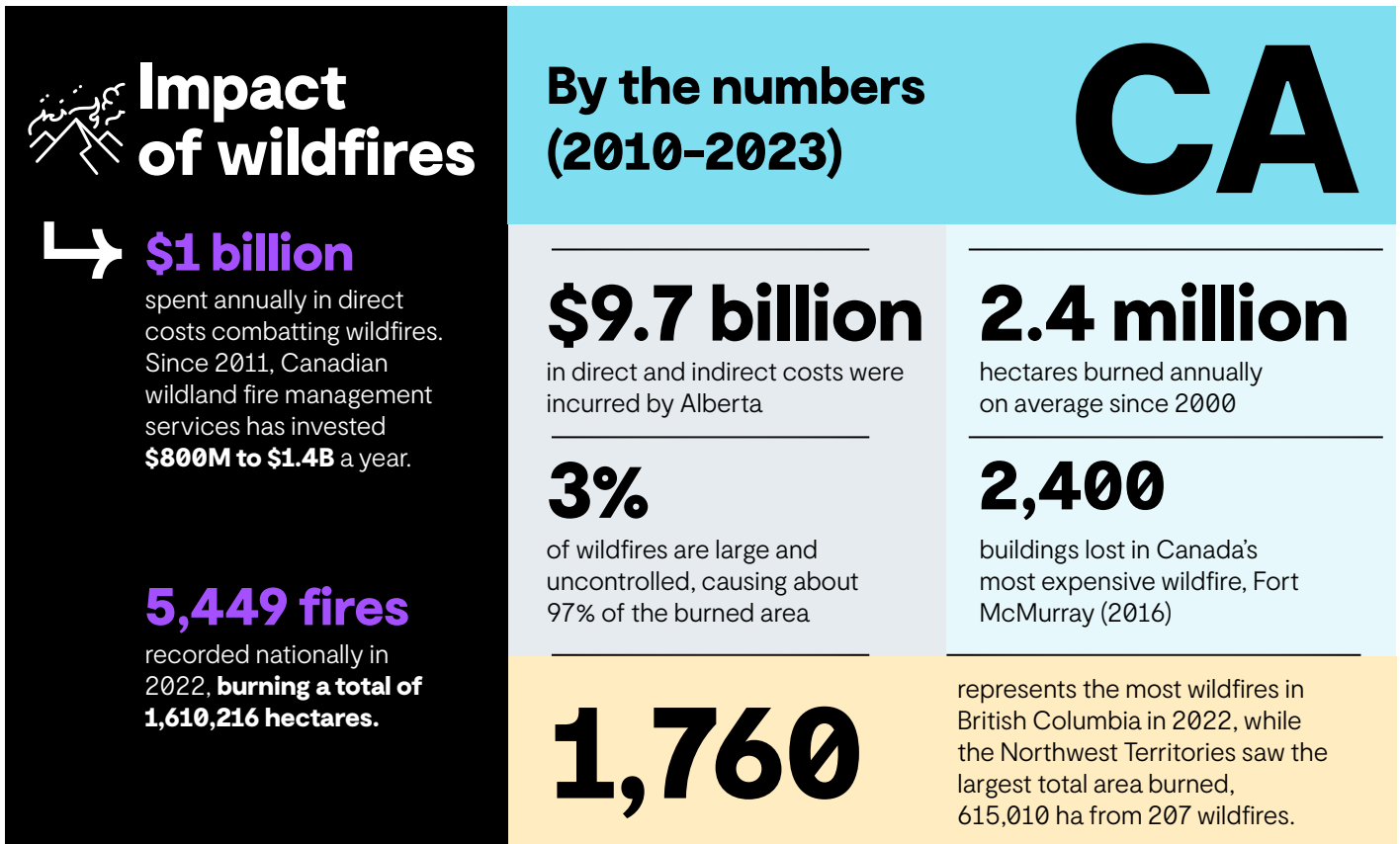


Note: All currency is shown in US dollars.

Sources: GHD analysis based on data from National Interagency Fire Center and National Centers for Environmental Information.



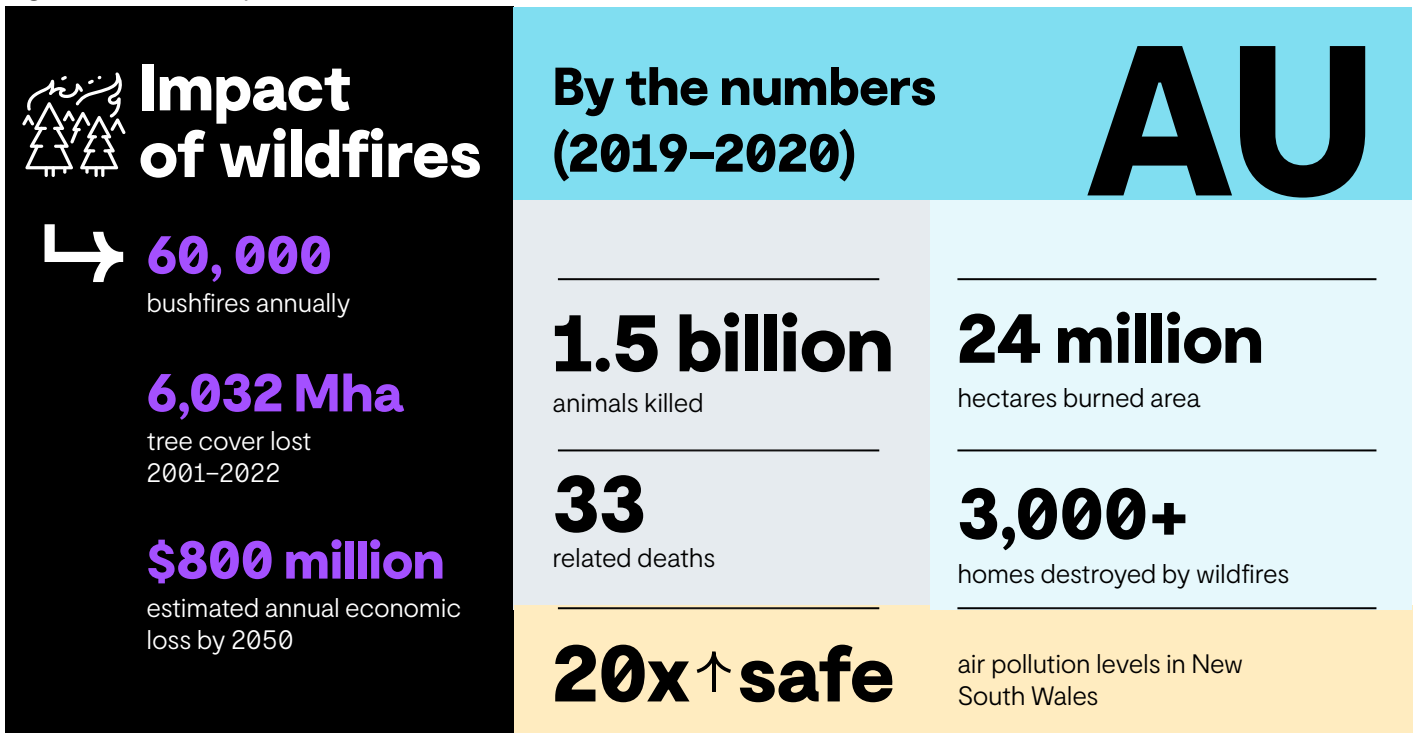
Figure 3. Wildfire impact: Canada



Note: All currency is shown in Canadian dollars.

Sources: GHD analysis based on data from Canadian Wildland Fire Information System, National Wildland Fire Situation Report and Canadian Space Agency.

Figure 4. Wildfire impact: Australia



Note: All currency is shown in Australian dollars.

Sources: GHD analysis based on data from Global Forest Watch, Royal Commission into National Natural Disaster Arrangements and Britannica.

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Challenges in effective wildfire evacuation

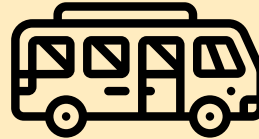
The outcome of a community evacuation from a wildfire depends on numerous factors, such as the following:



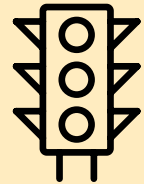
The severity and spread of fire conditions



The effectiveness of intervention measures like prior planning, firefighting activities and emergency resources



The population's ability to respond (including the availability of private and public transport) and potential disruptions caused by other resource users or by background traffic



The impact of this response on the available traffic system and on the road network

The actions taken by the community and emergency responders during a wildfire will produce conditions that evolve during the incident itself.

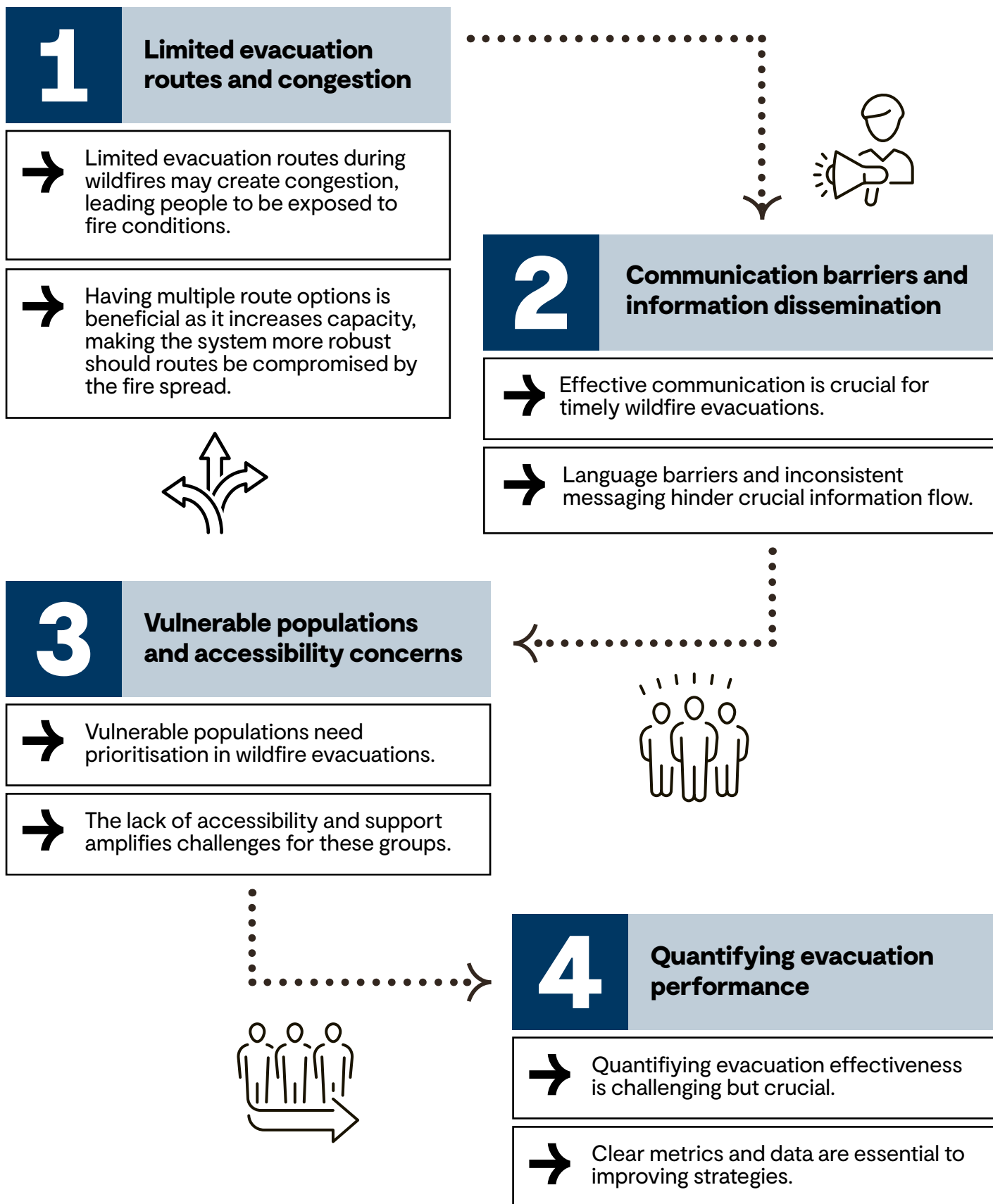
The initial fire may develop and spawn new fires through the transport of firebrands. Similarly, multiple communities may be affected by a single fire and be subject to differing information and guidance (involving multiple jurisdictions). Understanding the development of the fire alone is not a sufficient predictor of the impact on nearby populated areas.

New communities become vulnerable to this threat as people move to WUI locations. In addition, communities historically threatened by wildfires are facing new and unfamiliar conditions. This makes it harder to derive projections directly from historical fires, i.e., the potential to identify outcomes derived from “similar” recent incidents, given sensitivities to changes in the initial congestion and underlying dynamics. It is necessary to understand a community's capacity to cope with the conditions.

Given the challenges posed to the traditional evidential supports (of analytical derivations and statistical correlations), wildfire evacuation modelling may fill some gaps to explore how the many elements interact and show the consequences of this interaction. Any model applied will inevitably be a gross approximation; however, coupled with subject matter expertise, it can at least demonstrate the impact of certain factors, how they interact and the sensitivity of the outcome to this interaction. This demonstration might suggest collecting more fundamental data or a more refined analysis.

Figure 5 spotlights four significant challenges that require consideration in evacuation planning (route use, effective communication managing response and addressing the particularly vulnerable) and outlines the need to quantify evacuation performance to assess their impact. Strategising will inevitably involve assessing the challenges faced and quantifying (or at least ranking) the options available — to inform the allocation of resources.

Figure 5. Strategising efficient wildfire evacuations: Overcoming obstacles and improving safety



Source: GHD Burntfields™ analysis.

1 Limited evacuation

- Evacuation routes can quickly become congested, particularly during short-time windows and when other residents (e.g. background traffic or those involved in shadow evacuation) are using the network.
- Congestion not only delays evacuations but also raises the risk of road accidents.
- Having multiple route options is beneficial for managing demand and providing alternative egress paths in case of blocked primary routes.
- Mitigation strategies include expanding evacuation routes, maintaining passable roadways and implementing traffic management measures.
- Real-time monitoring and early warning systems help identify congestion points and guide residents toward alternative routes, enhancing evacuation efficiency and safety.

2 Communication barriers and information dissemination

- Effective communication during wildfire evacuations and pre-incident outreach is crucial.
- Residents require timely and accurate information about approaching wildfires, evacuation orders and safe shelter locations.
- Challenges include language barriers, limited technology access, prior false alarms and inconsistent messaging.
- Communities should invest in robust communication infrastructure (emergency notification systems, mobile apps and social media) and emphasise public education on staying informed and having clear evacuation plans.
- Such approaches empower residents with familiar and logical guidance, increasing their likelihood of compliance.

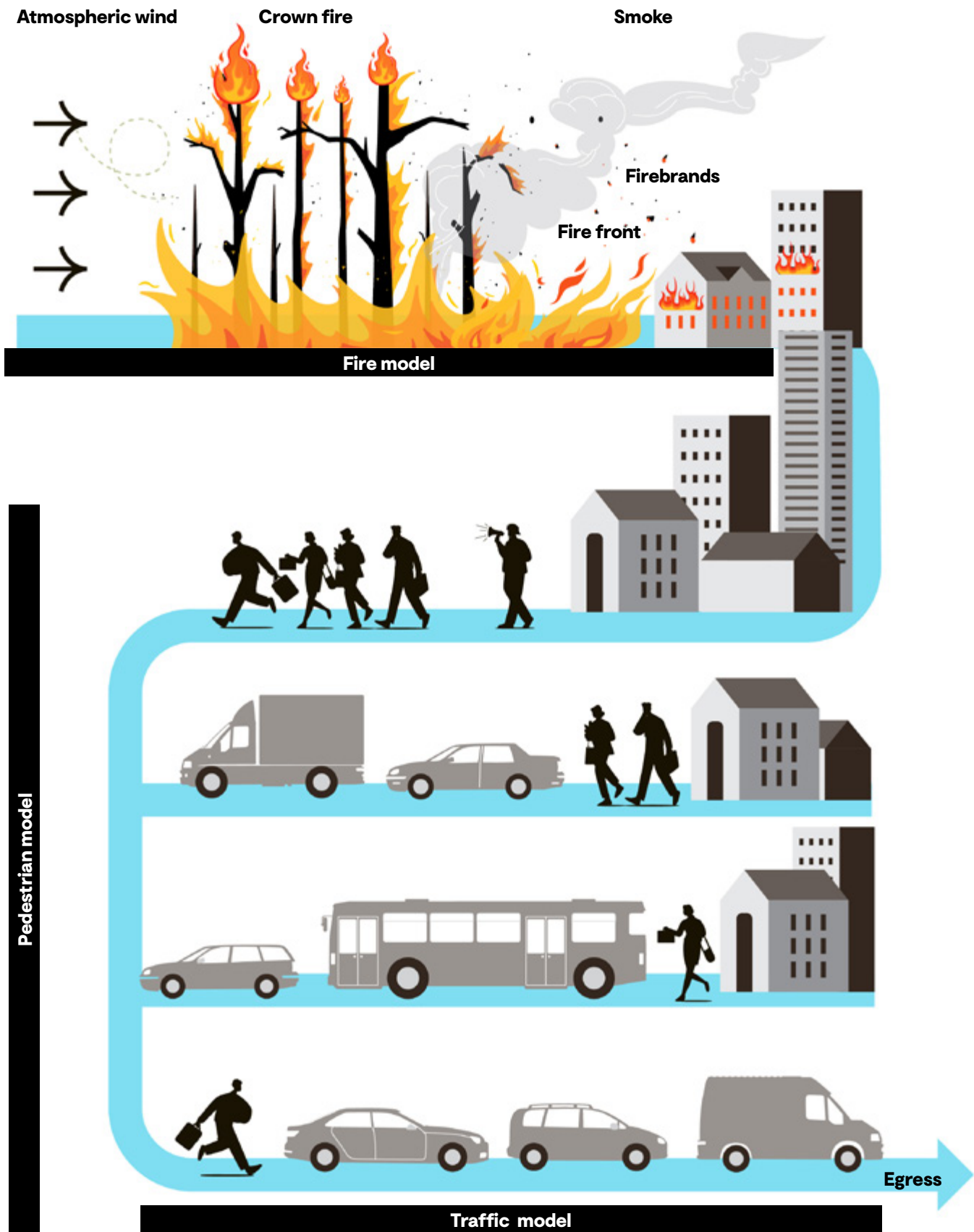
3 Vulnerable populations and accessibility concerns

- Wildfire evacuations need to prioritise the elderly, individuals with disabilities, those with limited mobility and those with fewer resources.
- These groups face challenges, including limited accessible transportation, medical support and property maintenance.
- Plans should consider these groups' needs, including accessible evacuation centres with medical facilities and trained staff.
- Collaboration with community organisations and relevant agencies is essential to protecting vulnerable populations during evacuations.

4 Quantifying evacuation performance

- Quantifying the effectiveness of wildfire evacuations is a challenging but essential task. It allows evacuation performance to be estimated and the design factors and interventions that affect evacuation to be identified.
- However, to date, other than the *WUI-NITY* evacuation simulation model co-developed by GHD (Figure 6), relatively few dedicated tools incorporate these details into one platform: resident response, traffic movement, refuge use and the spread of the fire.
- Given the historical lack of industrial demand, such tools would inevitably be developed in research/government organisations.¹³
- Evacuation simulation models should form part of the toolkit, putting such techniques into practice and support community preparedness.
- Additionally, collecting data on evacuation times, the number of evacuees and the success rate of evacuations can provide valuable insights for planning and resource allocation.

Figure 6. WUI-NITY: Advanced evacuation simulation model



Source: GHD Burntfields™ analysis.

Enhancing wildfire evacuation: The synergy between government, business and communities

This collaboration may take on formal structures or be rooted in clear communication, evolving services and funding mechanisms, all while fostering a deeper understanding of the resources needed and their utilisation. Governments bring planning, preparedness and the authority to coordinate resources, while the business sector contributes innovation, agile resource deployment and logistics expertise. Communities play a crucial role by providing local knowledge, resilience and the human element in evacuation efforts. This synergy is essential to navigate and address the multifaceted challenges of wildfires — especially as wildfire scenarios rapidly change and affect new locations. Let us explore into the pivotal roles these three entities play in wildfire evacuation.

→ Government's role in a wildfire evacuation

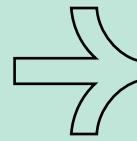
- **Planning, preparedness and response frameworks:** Government agencies are responsible for developing comprehensive evacuation plans for wildfire scenarios. These plans should include clear protocols for issuing evacuation orders, establishing evacuation routes and designating safe shelter locations. Robust preparedness frameworks have to be in place so communities are ready to react swiftly and coherently when wildfires threaten and eventually act as part of a choreographed response.
- **Resource allocation and coordination:** Effective evacuation efforts rely on allocating and coordinating resources. Governments must quickly mobilise firefighting personnel, equipment and supplies. Collaborative coordination between agencies and jurisdictions enhances the effectiveness of the emergency response.

- **Public education and awareness campaigns:** Government agencies should engage in proactive public education campaigns to raise awareness about wildfire risks, evacuation procedures and preparedness measures. Educated and informed communities are better equipped to respond to evacuation orders and make informed decisions during wildfire events.
- **The business sector's contribution to wildfire evacuation**
 - **Mobilising resources:** The industrial sector can augment resources (government or community) during wildfire evacuations. This includes providing skilled staff, such as heavy-equipment operators and logistics experts, to assist firefighting and evacuation efforts. Additionally, industrial entities can offer specialised equipment and technology, such as drones for aerial surveillance and communication systems for enhancing coordination.
 - **Support in logistics and transportation:** The logistics expertise of the industrial sector is invaluable in achieving the efficient movement of people and resources during evacuations. This sector can assist in managing transportation logistics, providing vehicles for evacuations and offering expertise in supply chain management, offering the timely delivery of essential goods to evacuation centres.
 - **Technological innovations for early detection and rapid response:** The industry is well-positioned to contribute cutting-edge technological innovations that enhance early wildfire detection and rapid response. This can include developing advanced fire monitoring systems, predictive analytics and real-time data analysis. Such innovations empower governments to detect wildfires in their nascent stages and respond more precisely.

- **Risk assessment for evacuation and performance assessment:** The industry is often better placed to capture and interrogate traffic data (which may be captured for a range of different reasons) and apply analytical and simulation tools to extract insights and make projections — as to the impact of current and future designs and procedures on evacuation performance. Because of the nature of governments, it can be challenging to act in an agile manner outside of extreme circumstances (e.g. emergency conditions being declared).

→ **Communities’ role in wildfire evacuation**

- **Local knowledge and expertise:** Communities possess intimate knowledge of their surroundings, including terrain, local roads and potential hazards. This information is crucial for effective evacuation planning and resource allocation during a wildfire emergency.
- **Cultural practices and Indigenous knowledge:** Indigenous communities’ traditional, as well as new and developing practices, can offer sustainable and effective wildfire mitigation strategies. Integrating these practices where appropriate can help with wildfire prevention. Learning from Indigenous communities and acknowledging the value of traditional ecological knowledge can provide unique insights into wildfire management.
- **Social support and cooperation:** The sense of community within neighbourhoods encourages residents to assist each other during evacuations. This mutual-support system allows vulnerable individuals, such as the elderly or disabled, to receive the help they need to evacuate safely.
- **First responders and immediate assistance:** In many cases, community members become de facto first responders, providing immediate assistance before official responders arrive. Their actions can save lives and mitigate the impact of the wildfire.
- **Public engagement and preparedness:** Community involvement in public awareness campaigns, evacuation drills and education efforts enhances overall preparedness levels. These initiatives empower residents to understand evacuation procedures, identify safe shelters and react effectively in wildfire situations.



International cooperation is crucial for a concerted global action to curb wildfires

Wildfires substantially threaten sustainable development due to their adverse effects on human health, the climate, the environment and economies. Within the United Nations Forum on Forests (UNFF), delegates have consistently emphasised the increasing peril that uncontrolled wildfires pose to the health of the world’s forests. This underscores the urgent need for increased investments in wildfire control and management.

Various global and regional cooperative ventures are in place to address this issue, including the Global Wildland Fire Network, along with its regional counterparts, Regional Fire Management Resource Centres, Regional Fire Monitoring Centres and the recently established Global Fire Management Hub, introduced in May 2023 by the Food and Agriculture Organisation of the United Nations.

In October 2023, the government of India hosted an initiative supporting the UNFF. This country-led effort aims to facilitate the sharing of best practices concerning the long-term management of forests, the mounting challenges tied to forest fire prevention, and management, and issues of forest certification among forum members. Such endeavours are instrumental in advancing technological cooperation, fostering the exchange of scientific data, bolstering capacity development and promoting fire management and research training.

Effective strategies in global wildfire crisis management

Innovative and effective solutions, as exemplified in California, Australia and Florida, have become more commonplace.

Australia, severely impacted by bushfires, has prioritised industry-led technological innovations for early warning. This includes employing satellite and drone technology, leveraging crowdsourced data through apps and utilising predictive analytics to anticipate fire behaviour with greater precision. This approach has enabled quicker response times and more-accurate evacuation orders, making it a referential model for other fire-prone regions worldwide.

California has advanced collaborative evacuation planning in high-risk regions, adopting a unified command structure and advanced communication systems such as the Wireless Emergency Alert (WEA) and the Emergency Alert System (EAS), promoting community engagement through educational campaigns and evacuation drills. These coordinated efforts have significantly enhanced the state's efficiency and effectiveness of wildfire evacuations.

Florida, frequently confronting the convergence of hurricanes and wildfires, has leveraged public-private partnerships (PPPs) to improve evacuation route efficiency. The state has reduced congestion and evacuation times during compounded crisis events by accessing real-time traffic data and utilising resources from the private sector, including additional buses, fuel and logistical support.

These case studies from disparate regions underscore the essential role of collaboration, innovation and unified approaches in navigating the multifaceted challenges posed by wildfires. The amalgamation of innovative strategies, industry acumen and cohesive efforts across sectors can make significant strides in safeguarding lives and communities, presenting a beacon of hope and a roadmap for regions grappling with the growing menace of wildfires.

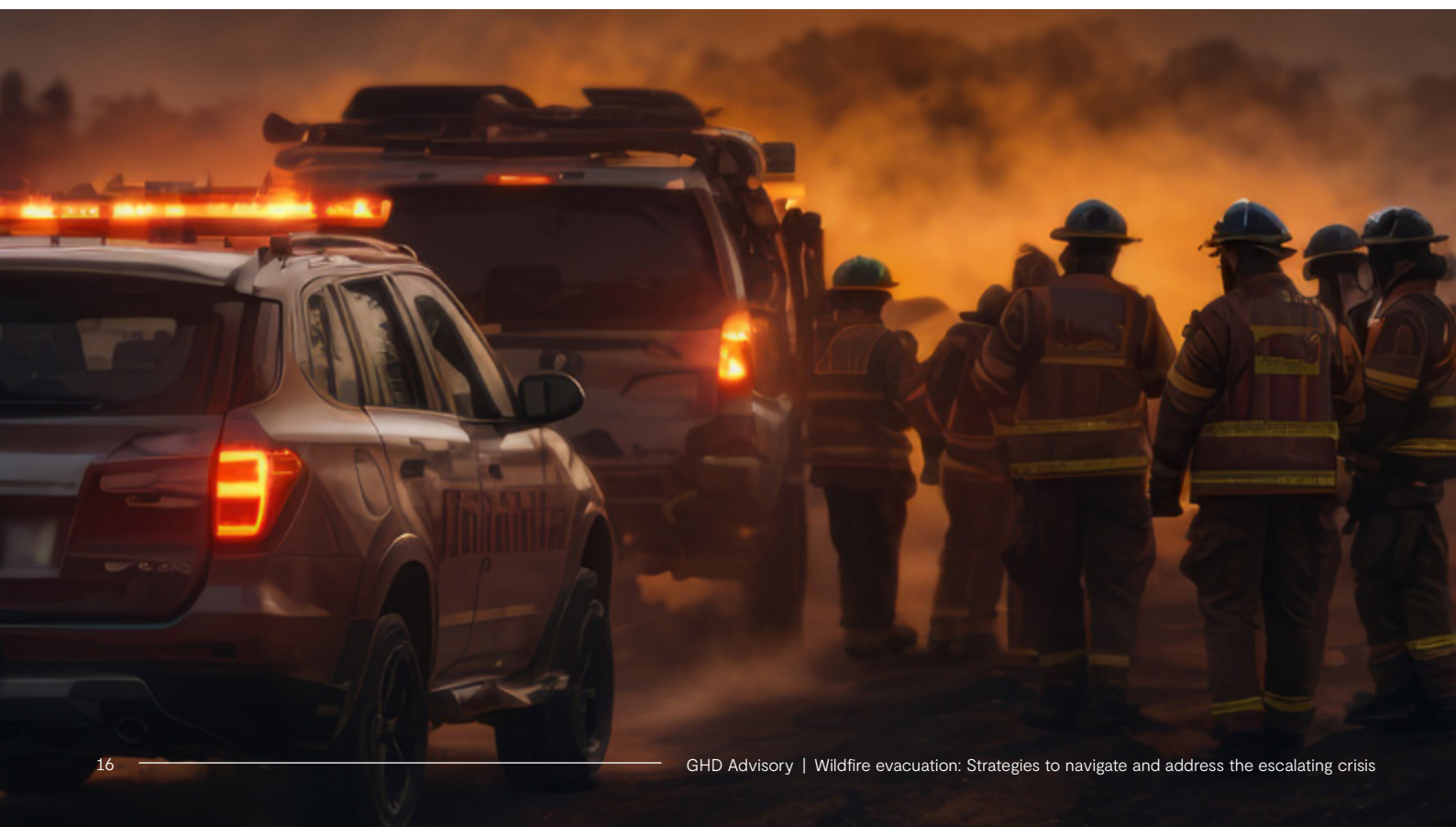


Figure 7. Select case studies: Effective strategies in global wildfire crisis management

Industry-led technological innovations for early warning



Challenge

→ Australia

Australia, prone to bushfires, needed more advanced early warning systems to detect wildfires in their early stages. Australia's bushfire crisis (June 2019–February 2020), **one of the worst wildfire disasters in modern history, killed or displaced nearly three billion animals.**



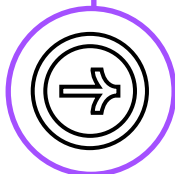
Solution

Australia's approach to enhancing early wildfire detection exemplifies the significant impact of industry-led technological innovations. The country's collaboration with tech companies and start-ups has led to the development of cutting-edge solutions.



Key success factors

- **Satellite and drone technology:** Australia has harnessed satellite and drone technology to monitor remote areas for potential ignition sources. Drones equipped with infrared cameras and AI algorithms can detect fire before it becomes visible.
- **Crowdsourced data:** The government partnered with tech companies to create apps that allow citizens to report smoke and fire sightings, providing real-time data that complements official monitoring efforts.
- **Predictive analytics:** By leveraging data analytics and machine learning, Australia can predict fire behaviour more accurately, helping authorities make informed decisions regarding evacuations and resource allocation.



Results

Australia's industry-led approach to technological innovation has significantly improved early wildfire detection, enabling faster response times and more targeted evacuation orders. This collaborative effort has become a model for other wildfire-prone regions worldwide.

Collaborative evacuation planning in high-risk regions



Challenge

→ California

California, known for its wildfire-prone landscapes, faces the perpetual challenge of evacuations in densely populated areas. Moreover, since 2023, California wildfires have emitted **127 million tonnes of greenhouse gases**.



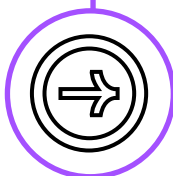
Solution

In response to the escalating wildfire crisis, California has exemplified the power of collaborative evacuation planning in high-risk regions. The state initiated a comprehensive approach by bringing together multiple agencies, including CAL FIRE, local law enforcement, emergency management and transportation authorities.



Key success factors

- **Unified command structure:** California adopted a unified command structure, streamlining decision-making during wildfires. This structure ensures coordinated response efforts and standardised evacuation protocols across jurisdictions.
- **Advanced communications systems:** The state invested in advanced communications systems, including the WEAS and the EAS, to rapidly disseminate evacuation orders and critical information to residents.
- **Community engagement:** California actively engages with communities through educational campaigns and evacuation drills, empowering residents to understand their roles in the evacuation process, fostering a culture of preparedness.



Results

This collaborative approach has improved the efficiency and effectiveness of the wildfire evacuations in California. By working together and leveraging advanced technology and community engagement, the state has made significant strides in protecting its residents and assets from the wildfire threat.

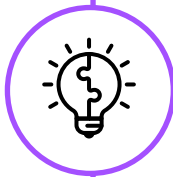
PPPs enhancing evacuation route efficiency



Challenge

→ Florida

Florida faced challenges in efficiently **evacuating coastal areas during hurricane-induced wildfires.**



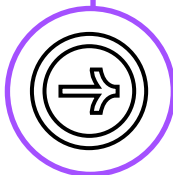
Solution

Florida's success story highlights the power of PPPs in enhancing evacuation route efficiency during wildfires, particularly when hurricanes converge with these events.



Key success factors

- **Real-time traffic data:** The state collaborated with private companies specialising in traffic management to access real-time data. This data informs dynamic routing decisions, ensuring evacuees are directed away from congested routes.
- **Private-sector resources:** Private-sector partners offered additional evacuation buses, fuel and logistical support, complementing the state's transportation resources during large-scale evacuations.
- **Community engagement:** PPPs also included coordination on evacuation messaging, ensuring consistent and timely information to the public via various communication channels.



Results

Florida's PPPs have enhanced evacuation route efficiency, reducing congestion and evacuation times during wildfire threats compounded by hurricanes. This case study showcases the importance of leveraging private-sector resources and expertise to bolster government efforts in times of crisis.

Source: GHD analysis based on data from *Scientific American*, the World Wildlife Fund (WWF) and the Florida Department of Health.

Enhancing wildfire resilience: The crucial role of the insurance industry

The insurance sector is uniquely positioned to drive positive change in wildfire management and resilience. The escalating threats of fire, flood and climate change demand a forward-thinking approach from the insurance industry.

Insurers can play a pivotal role in promoting resilience by adjusting premiums to reflect increased risks, incentivising risk-reduction behaviours among policyholders, and actively participating in disaster preparedness and recovery efforts.

By leveraging big data and AI, insurers can refine risk assessments, leading to more-accurate premium settings that reflect the true risk of wildfires in various areas. This precision incentivises homeowners and businesses to adopt fire-resistant construction materials and methods, along with landscape management practices that reduce fire risk and participate in community-wide fire safety initiatives. Furthermore, the insurance industry can spearhead innovations in financial products that support sustainable land use and construction practices. By offering reduced premiums for eco-friendly and fire-resistant properties, insurers encourage a shift towards more sustainable living that aligns with climate resilience goals.

Collaboration is essential to develop innovative insurance products that encourage sustainable practices and bolster community resilience against wildfires. And collaboration extends beyond policyholders to include partnerships with tech companies for data analysis, government bodies for policy development, and non-government organisations (NGOs) for community education and engagement. These partnerships can lead to the development of comprehensive strategies that address the financial aspects of wildfire risk and contribute to broader societal resilience.

Specific actions include:

→ **Government's role in a wildfire evacuation**

Enhancing predictive capabilities to accurately assess the risk of wildfires and their impact on different regions

→ **Incentivising risk mitigation**

Offering lower premiums or benefits for properties with fire-resistant materials, defensible space and other risk-lowering measures

→ **Investing in community resilience**

Supporting initiatives aimed at wildfire prevention, such as community education and infrastructure improvements to withstand fire outbreaks

→ **Rapid response and recovery funding**

Streamlining claims processing and providing immediate support to affected policyholders, thus facilitating quicker recovery

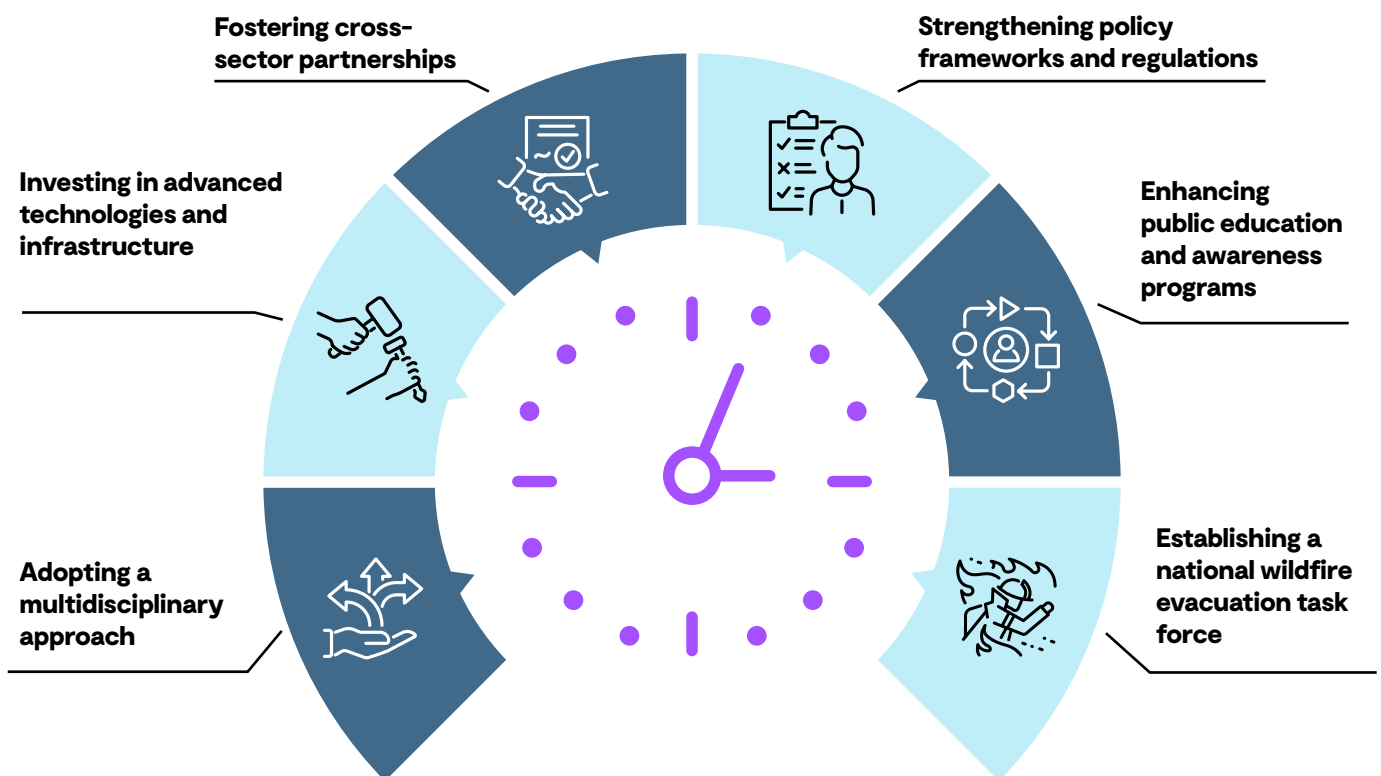
By adopting these strategies, the insurance industry not only mitigates its own risk exposure but also plays a central role in enhancing community resilience against wildfires, thereby contributing to a safer, more sustainable future.

The road ahead: A unified approach to the wildfire crisis

Preventing or mitigating wildfire impacts requires a holistic approach that includes prevention, preparedness and effective response strategies, as well as policies aimed at reducing the risk and promoting resilience in wildfire-prone areas.

The escalating wildfire crisis demands immediate and concerted action (Figure 8). To effectively navigate and address this pressing issue, GHD created the [Burntfields™ Wildfire Risk Management Solution](#), which incorporates the following recommendations for action.

Figure 8. *Building resilience against wildfires: Collaboration, innovation and education*



Source: GHD Burntfields™ analysis.

1 Adopting a multidisciplinary approach

It is unlikely that all necessary disciplines are addressed within any government department or company — especially at the local level. Governments, researchers and stakeholders should collaborate to develop comprehensive risk assessments considering climate data, land management practices, demographic changes, community response and vulnerable populations. These assessments should inform evacuation planning and resource allocation.

3 Fostering cross-sector partnerships

Cross-sector partnerships are a key to success. Governments can incentivise collaboration between public agencies, private companies, non-profit organisations and research institutions by offering grants, tax incentives and liability protections. These partnerships should focus on developing and implementing wildfire evacuation strategies that leverage the strengths of each sector.

5 Enhancing public education and awareness programs

Governments should allocate resources to create comprehensive campaigns that educate the public about wildfire risks, evacuation procedures and the importance of personal preparedness. These programs should be culturally sensitive, multilingual and accessible to all population segments.

2 Investing in advanced technologies and infrastructure

Governments and private-sector partners should explore innovative solutions, such as wildfire prediction models, early warning systems, and real-time monitoring using drones and satellite technology. Improved road networks, evacuation centres and communication systems must also be prioritised to enhance response capabilities.

4 Strengthening policy frameworks and regulations

Governments must strengthen building codes, zoning regulations and land-use planning to reduce wildfire risks in high-risk areas. Such strengthening may benefit from including external academic and industrial partners, ensuring not to compromise impartiality. Additionally, legislation should address wildfire liability issues to hold responsible parties accountable.

6 Establishing a national wildfire evacuation task force

To implement coordinated and effective responses to wildfires, governments should establish a national wildfire evacuation task force. This task force will bring together experts from various fields, including emergency management, transportation, healthcare and communications, to develop standardised evacuation protocols and share best practices across regions.

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Endnotes

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